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REQUIREMENTS FOR LEATHER OR RAW-HIDE EXCLUSIVELY USED IN THE MANUFACTURE OF PICKERS

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REQUIREMENTS FOR LEATHER OR RAW-HIDE EXCLUSIVELY USED IN THE MANUFACTURE OF PICKERS

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(*Continued on page* 2)

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Indian Standard

REQUIREMENTS FOR LEATHER OR RAW-HIDE EXCLUSIVELY USED IN THE MANUFACTURE OF PICKERS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 8 August 1977, after the draft finalized by the Textile Mill Leather Articles Sectional Committee had been approved by the Textile Division Council.

0.2 This standard is intended to serve as a guide to the manufacturers towards selection of suitable quality of raw-hide or leather for manufacturing pickers.

0.3 This standard forms a part of a series of Indian Standards on pickers of various shapes and dimensions corresponding to different types of looms. Other standards published so far in the series are given on the fourth cover page.

0.4 To familiarize the industry with International System of Units (SI Units) the basic SI Units as well as the recommended SI Units for use in the textile industry are given in Appendix A.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes physical and chemical requirements to help picker manufacturers in selection of correct quality of raw-hide or leather for manufacturing pickers.

---

*Rules for rounding off numerical values (*revised*).

2. PHYSICAL REQUIREMENTS

2.1 The physical requirements of leather or raw-hide used for the manufacture of pickers shall be as given below:

Characteristic	*Requirement*	*Method of Test, Ref to*
Shrinkage temperature :		
a) Raw-hide	60°C, *Min*	LP : 10 of IS : 5914-1970*
b) Vegetable-tanned leather	75°C, *Min*	
c) Combination-tanned leather	105°C, *Min*	
Apparent density	0·9 to 1·1 g/cm^3	LP : 5 of IS : 5914-1970*
Tensile strength :		
a) Raw-hide	2·94 kN/cm^2 (300 kgf/cm^2)	LP : 6 of IS : 5914-1970*
b) Leather	1·96 kN/cm^2 (200 kgf/cm^2)	
Elongation at break	60 to 80 percent	
Compressibility	10 percent, *Max*	Appendix B of this standard
Resilience	60 percent, *Min*	

3. CHEMICAL REQUIREMENTS

3.1 The chemical requirements of leather or raw-hide used for the manufacture of pickers shall be as follows :

Characteristic	*Requirement*	*Method of Test*
Oils and fats	3 to 8 percent	LC : 4 of IS : 582-1970†
Water solubles	7 to 14 percent	LC : 6 of IS : 582-1970†
Insoluble ash	1 percent, *Max*	LC : 8 of IS : 582-1970†
Total ash	0·6 to 1·8 percent	LC : 3 of IS : 582-1970†
Hide substance	40 to 75 percent	LC : 5 of IS : 582-1970†
*p*H of water solubles	3 to 5	LC : 18 of IS : 582-1970†

3.2 For testing chemical requirements the test specimens may be drawn from finished pickers as well in addition to those from leather or raw-hide.

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*Methods of physical testing of leather.

†Methods for chemical testing of leathers (*first revision*).

APPENDIX A

(*Clause* 0.4)

SI UNITS

TABLE 1 INTERNATIONAL SYSTEM OF UNITS

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	CONVERSION
Force	newton	N	1 N = 1 kgf.1 m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

TABLE 2 RECOMMENDED SI UNITS FOR TEXTILES

Sl No.	Characteristic	SI Unit		Metric Unit		Application
		Unit	Abbreviation	Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1)	Length	Millimetre	mm	—	—	Fibres
		Millimetre, centimetre	mm, cm	—	—	Samples and test specimens (as appropriate)
		Metre	m	—	—	Yarns, ropes and cordages, fabrics
2)	Width	Millimetre	mm	—	—	Narrow fabrics
		Centimetre	cm	—	—	Other fabrics
		Millimetre, centimetre	mm, cm	—	—	Samples and test specimen (as appropriate)
		Centimetre, metre	cm, m	—	—	Carpets, druggets, durries (as appropriate)
3)	Thickness	Micrometre (micron)	µm	—	—	Delicate fabrics
		Millimetre	mm	—	—	Other fabrics, carpets, felts
4)	Linear density*	Tex	tex	—	—	Yarns
		Millitex	mtex	—	—	Fibres
		Decitex	dtex	—	—	Filament and filament yarns
		Kilotex	ktex	—	—	Slivers, ropes and cordages
5)	Diameter	Micrometre (micron)	µm	—	—	Fibres
		Millimetre	mm	—	—	Yarns, ropes, cordages
6)	Circumference	Millimetre	mm	—	—	Ropes, cordages

7) Threads in cloth :					
a) Length	Number per centimetre	ends/cm	—	—	Woven fabrics (as appropriate)
	Number per decimetre	ends/dm	—	—	
b) Width	Number per centimetre	picks/cm	—	—	
	Number per decimetre	picks/dm	—	—	
8) Warp threads in loom	Number per centimetre	ends/cm	—	—	Reeds
9) Stitches in cloth :					
a) Length	Number per centimetre	courses/cm	—	—	Knitted fabrics (as appropriate)
	Number per decimetre	courses/dm	—	—	
b) Width	Number per centimetre	wales/cm	—	—	
	Number per decimetre	wales/dm	—	—	
10) Stitch length	Millimetre	mm	—	—	Knitted fabrics Made-up fabrics
11) Mass per unit area	Grams per square metre	g/m^2	—	—	Fabrics
12) Mass per unit length	Grams per metre	g/m	—	—	Fabrics
13) Twist	Turns per centimetre	turns/cm	—	—	Yarns, ropes (as appropriate)
	Turns per metre	turns/m	—	—	
14) Test or gauge length	Millimetre, centimetre	mm, cm	—	—	Fibres, yarns and fabric specimens (as appropriate)
15) Breaking load	Millinewton	mN	grams force	gf	Fibres, delicate yarns (skeins or individual)
	Newton	N	kilogram force	kgf	Strong yarns (individual or skeins), ropes and cordages, fabrics

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*For conversion of values in traditional counts to the tex and *vice versa*, reference to IS : 3689-1966 ' Conversion factors and conversion tables for yarn counts ' shall be made.

(*Continued*)

TABLE 2 RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

SL No.	CHARACTERISTIC	SI UNIT		METRIC UNIT		APPLICATION
		Unit	Abbreviation	Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
16)	Breaking length	Kilometre	km	—	—	Yarns
17)	Tenacity	Millinewton per tex	mN/tex	grams force per tex	gf/tex	Fibres, yarns (individual or skeins)
18)	Twist factor or twist multiplier	Turns per centimetre × square root of tex Turns per metre × square root of tex	turns/cm × $\sqrt{\text{tex}}$ turns/m × $\sqrt{\text{tex}}$	— —	— —	Yarns (as appropriate)
19)	Bursting strength	Newton per square centimetre	N/cm^2	kilogram force per square centimetre	kgf/cm^2	Fabrics
20)	Tear strength	Millinewton Newton	mN N	grams force, kilogram force	gf, kgf	Fabrics (as appropriate)
21)	Pile height	Millimetre	mm	—	—	Carpets
22)	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	g/m^2/mm pile height	—	—	Pile carpet
23)	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/unit deformation	grams force per tex per unit deformation	gf/tex/unit deformation	Fibres, yarns and strands

NOTE — Where more than one unit has been given for one characteristic, any of the units may be used appropriate.

APPENDIX B

(*Clause* 2.1)

METHOD OF TEST FOR COMPRESSIBILITY AND RESILIENCE

B-1. APPARATUS

B-1.1 The compressibility and resilience tester (*see* Fig. 1) having a circular presser-foot of diameter 3·2 mm shall be used for this test. The premissible deviation from flatness of presser-foot shall be ± 0·018 mm. The tester shall be provided with the following:

a) An arrangement by which the indenting load shall be applied vertically to the specimen without impact, and

b) A thickness gauge graduated in 0·01 mm.

B-2. PROCEDURE

B-2.1 From an apron in the test sample, cut out two specimens, each measuring 20 × 20 mm.

B-2.2 Level the tester. Clean the base of the tester and the presser-foot. Bring the gauge to zero by allowing the presser-foot to rest on the base and rotating the dial to line up the needle and the zero mark. Then by using the handwheel, raise the weight rack until it is even with the guide pin top. Raise the presser-foot with fingers and insert one test specimen. Lower the presser-foot to rest upon the test specimen without impact. Note the thickness on the dial at this point.

NOTE — The thickness measurement should be done under a preload of 0·14 N (14 gf) on the test specimen.

B-2.3 Place a weight of 910 g on the platform and rotate the handwheel a complete turn after contact has been made with spindle [thus a pressure of 114 N/cm^2 (11·6 kgf/cm^2) is applied]. Note the reading on the dial.

B-2.4 Rotate the handwheel to remove the weight from the contact of the spindle. Note the reading on the dial.

B-3. CALCULATION

B-3.1 Calculate the compressibility percent and resilience percent as follows:

$$C = \frac{P - M}{P} \times 100$$

$$R = \frac{A - M}{P - M} \times 100$$

where

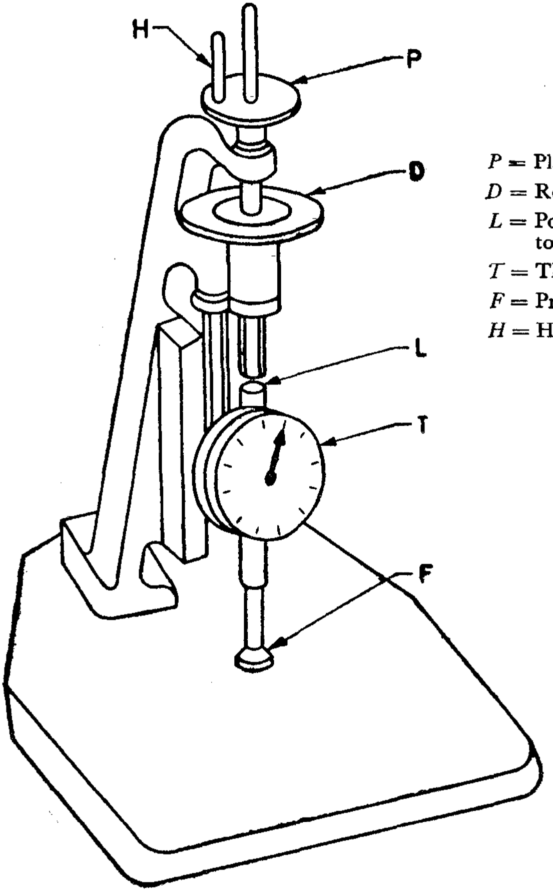
C = compressibility, percent, of the original thickness;

P = thickness of the test specimen under preload of 0·14 N (14 gf);

M = thickness of the test specimen under pressure of 114 N/cm^2 (11·6 kgf/cm^2);

R = resilience, percent; and

A = thickness of the test specimen after the load has been removed.



P = Platform on which load is placed
D = Releasing disc
L = Point at which load is transmitted to the gauge
T = Thickness gauge
F = Presser-foot
H = Handwheel

FIG. 1 COMPRESSIBILITY AND RESILIENCE TESTER

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TEXTILE MILL LEATHER ARTICLES

IS:	
1225-1972	Leather picking band for looms (*first revision*)
1619-1976	Buffer band for cop-changing automatic looms
1737-1976	Spring buffers for cotton looms (*first revision*)
1903-1977	Recommendations on shape and dimensions of pickers for jute looms (*first revision*)
1906-1977	Recommendations on shape and dimensions of 4 B pickers (*second revision*)
3446-1977	Leather aprons for drafting systems (*first revision*)
6300-1971	Picker savers (formaldehyde tanned leather)
8545-1977	Loom pickers
8546-1977	Requirements for leather or raw hide exclusively used in the manufacture of loom pickers
8547-1977	Recommendations on shape and dimensions of single box pickers for automatic looms

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Alteration

(*Page 4, informal table under clause 2.1, under column 'Characteristic'*) - Substitute 'Tensile strength, *Min*' *for* 'Tensile strength'.

(TDC 21)

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